### **U.S. Department of Commerce**

National Institute of Standards and Technology Gaithersburg, MD 20899

Certificate Number: 99-076

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# National Type Evaluation Program

## Certificate of Conformance

for Weighing and Measuring Devices

For:

Price Computing Scale Digital Electronic

Models: SG and SF Series

Capacity: 6 kg to 30 kg (15 lb to 60 lb) (See Below)

 $n_{max}$ : 3000

Platform: 300 mm x 280 mm (12" x 11")

Accuracy Class: III

Submitted by:

A & D Engineering, Inc. 1555 McCandless Drive Milpitas, CA 95035 Tel: (408) 263-5333 Fax: (408) 263-0119

Contact: Jerry Wang

### **Standard Features and Options**

Initial zero setting mechanism (IZSM) Automatic zero setting mechanism (AZSM)

Gross/net weight display Semi-automatic zero setting mechanism (push-button)

Semi-automatic tare (push-button) RS-232 communication port Battery power supply AC to DC power adapter

Model SF Series comes with a tower customer display Load cell: A & D Model SF/SG (30 kg capacity)

Model SG Series comes with a built-in operator and customer display

Models*	Capacities	
SF-6 or SG-6	15 lb x 0.005 lb	6 kg x 0.002 kg
SF-15 or SG-15	30 lb x 0.01 lb	15 kg x 0.005 kg
SF-30 or SG-30	60 lb x 0.02 lb	30 kg x 0.01 kg

#### \* Suffix descriptions:

Model SF Series: KA - Vacuum fluorescent display with AC hard wired

KB - Liquid crystal display with AC adapter KC - Vacuum fluorescent display with AC adapter

Model SG Series: KA - Liquid crystal display with AC adapter

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: June 4, 1999

Gilbert M. Ugiansky, Ph.D. Chief, Office of Weights and Measures Issue Date: August 17, 1999

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#### A & D Engineering, Inc. Price Computing Scale Models: SG and SF Series

**Application:** For use in direct sales, price computing, or general purpose weighing.

**<u>Identification:</u>** A metal identification tag is attached on the right side of scale.

<u>Sealing:</u> A pressure sensitive security seal can be applied over the plate located on the bottom of the scale. The plate is used to cover access to the calibration switch.

<u>Test Conditions:</u> The Models SF-30 KA and SF-6 KB price computing scales were submitted for evaluation. The emphasis of the evaluation was on the device design, operation, performance, and marking requirements. Each device was tested for width of zero, center of zero, discrimination, and zone of uncertainty tests. Several increasing/decreasing load and shift tests were conducted. Additionally, the devices were tested over a voltage range of 100 VAC to 130 VAC and 10.9 VDC and 12 VDC. Influence factor tests were conducted on each scale over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). A load of one-half capacity was applied to the scales over 100 000 times. The devices were tested periodically during this time.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: NIST Handbook 44, 1999 Edition

**Tested By:** S. Chan (CA)